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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/868,480      | 07/13/2001  | Koji Hanaoka         | 1205-01             | 1817             |

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IP DEPARTMENT OF PIPER RUDNICK LLP  
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EXAMINER

BHAT, NINA NMN

ART UNIT PAPER NUMBER

1764

DATE MAILED: 08/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                               |                                |  |
|------------------------------|-------------------------------|--------------------------------|--|
| <b>Office Action Summary</b> | Application No.<br>09/868,480 | Applicant(s)<br>HANAOKA ET AL. |  |
|                              | Examiner<br>N. Bhat           | Art Unit<br>1764               |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 March 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 4,5,9 and 10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6-8 is/are rejected.
- 7) ☒ Claim(s) 4,5,9 and 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 1-13-01 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. Applicant's preliminary amendment to the specification of June 19, 2001 is acknowledged.
2. Claims 4-5 and 9-10 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend on another multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims have not been further treated on the merits.
3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. Claims 1-3 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 07-268349[abstract machine translated] in combination with JP 11241072[abstract in English only].

JP 07-268349 teaches the invention substantially as claimed. JP 07-268349 teaches a method of making a high strength coke for metallurgical use or in steel and or

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iron making which has improved gas reactivity as well as high strength. Specifically JP 07-268349 teaches using a coal blend of non-caking coke having a particle diameter of less than or equal to 0.6 mm and then also feedstock coal which has a particle diameter of 0.6 to 3.0 mm. A third particle size of caking coal having a particle diameter of less than or equal to 0.6 mm and this type of coal is blended with the other 2 types of coal. The resultant powder coal is then incorporated with a caking agent consisting of at least one kind of coal tar, pitch and petroleum based heavy oil followed by pressure molding and then carbonization to form a metallurgical grade coke.

However, JP 07-268349 does not specifically teach using an applicant's specific caking coal having medium rank and low fluid in which a content of inert component is 30 vol% or more.

JP 07-268349 as explained above teaches applicant's basic concept of providing a blast furnace coke which has high reactivity and high strength which uses a coal blend which has a particle size which is within the range as claimed by applicant. JP 07-268349 teaches incorporating the coal blend with a caking agent, which includes coal tar, pitch, or a petroleum, based heavy oil and the coal blend includes both caking and non-caking coal.

JP 11241072 teaches a low bulk density coke having a high porosity without decreasing the strength but using an ordinary coal blend, which includes pseudo-particles, which are formed by attaching a reinforcement to the surface of a pore-forming agent, which is then carbonized to form coke, which has an apparent density of 1.05-1.20 g/cm.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a blast furnace coke and which has high reactivity and high strength, from the prior art because the prior art teaches the basic concept of using a coal blend composed of both caking and non caking coal, the prior art further teaches incorporating inerts such as pore formers as well as coal tar, pitch and petroleum based heavy oil which is pressure molded and the subjected to dry distillation thus producing a coke having high reactivity and high strength. Although applicant's medium rank and low fluidity and mean reflectance is not specifically recited in either of the references, the coal blend would implicitly if not inherently possess the characteristics of the coal blend since the concept of using both caking and non-caking coal blends has been taught and suggested by the prior art and to modify the blends based on particle diameter, porosity and the desired characteristics of the resultant metallurgical grade coke would have been obvious to one having ordinary skill in the art as the suggestion to use the blend of coal, the pore forming and using coal of caking and non-caking type with a particular particle diameter has been taught by the prior art thus evidence that manipulation of the coal blend based on the properties of the coke desired is within the realm of the ordinary artisan absent criticality in showing.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kiritani teach as process for preparing blast furnace cokes using a low grad coal which comprise the steps of adding abider to a coal for making briquettes. Wienert teach a process of making a high strength metallurgical coke. JP 11021561 teaches a method of making a coke for a blast furnace wherein the grain size

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of the non-caking or low caking coal is maintained as being 3 mm or smaller.

JP2001011472 teaches a method of making coke, which includes adding pseudo-particles having a pore-forming agent to blended coal.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to N. Bhat whose telephone number is 571-272-1397. The examiner can normally be reached on Monday-Friday, 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



N. Bhat  
Primary Examiner  
Art Unit 1764